

Docket #: Nelson.G-02

**APPLICATION**

Of

Gord Nelson

For

**UNITED STATES LETTERS PATENT**

On

Golf-Related Game with Video Recording System

Sheets of Drawings: Three



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TITLE: Golf-Related Game with Video Recording System

**BACKGROUND OF THE INVENTION**

5 RELATED APPLICATIONS:

This application is a Continuation In Part Application of a prior filed application having serial number 10/016,105 and filing date of 10/30/01 and entitled: Golf-Related Video Recording Apparatus.

10 INCORPORATION BY REFERENCE:

Applicant(s) hereby incorporate herein by reference, any and all U. S. patents and U.S. patent applications cited or referred to in this application.

FIELD OF THE INVENTION:

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This invention relates generally to the game of golf and more particularly to a particular contest type of game played on a golf course.

DESCRIPTION OF RELATED ART:

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The following art defines the present state of this field:

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Jetton, U.S. 3,104,879 describes a golf driving range comprising a fairway, a line of tee stands adjacent an end of said fairway, a pond located in said fairway, a generally annular float on said pond, a flagged pole centrally upstanding from said float, means secured to said float supporting said pole, and upwardly-convex generally frusto-conical plate concentric with said pole, the peripheral edge of said plate being disposed closely adjacent the inner periphery of said float to define an annular trough; flexible means suspending said plate from said pole in a manner whereby the weight of a golf ball in said trough will cause said

plate to tilt downwardly into engagement with said float, and means defining annular electrical switch contacts at the peripheral edge of said plate and at the inner periphery of said float along the annular area of the latter engaged by said plate on downward tilting movement of the latter.

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Baker, U.S. 4,922,222 describes a golf ball whose presence is sensed upon a tee. After it is struck, its presence is sensed in a target cup. A Hole in One Alarm receives status information from the tee sensor and the cup sensor, and processes that information using logic and timing elements to determine that the sequence and timing conforms to a true "hole  
10 in one" event, then activating a signal. The logic and timing elements are coupled and set so as to reject deliberate attempts to defeat the Hole in One Alarm and other event sequences not consistent with a true "hole in one" event.

Shirley, U.S. 4,934,705 describes a multi-holed golf course having fairways, greens and tee  
15 boxes comprising a television monitor located on the tee box; a videocassette player; a videocassette within said videocassette player having video images stored thereon including images of the golf hole on which the apparatus is located; and apparatus to initiate play of the videocassette player so as to display video images of said golf hole upon said television monitor. Electrical power may be provided by a battery connected to a battery charger  
20 operated by solar panels located on top of a cabinet which contains the television monitor and videocassette player.

Vincent, U.S. 5,102,140 describes a system for recording the occurrence of a hole-in-one or other preselected event at a golf layout including a video camera trained upon the tee, the  
25 target putting green, and any intervening area between the tee and putting green, plus a recording device for storing video images showing the flight trajectory of a golf ball from a tee to the green. The video camera and recording device are operated by a coin control adjacent to the tee. A golfer first inserts the appropriate coins, causing the video camera and recording device to be operational for a predetermined time period. If a hole-in-one or other

specified event occurs, the recorded video images can be monitored to verify this fact and to substantiate the claim of a player to any outstanding offer of a prize or reward.

5 Nichols et al., U.S. 5,354,052 describes a device for detecting the presence of a golf ball in a ball-receiving cup comprising a flag pole having a tubular lower portion dimensioned to be received within a standard ball-receiving cup and supporting four photointerruptors each comprising an infrared emitter and a corresponding photodetector, with the beams from the emitters passing through opening in the tubular portion and being spaced at 90-degree intervals around the periphery of the tubular portion so that the four quadrants of the cup are  
10 within the fields of the photointerruptors. When a golf ball enters the cup, the infrared beam from one of the emitters is reflected from the surface of the golf ball and is received by the corresponding photodetector to cause a change in the state of the photodetector which in turn causes a display to be illuminated to indicate that a golf ball has ended the cup.

15 Reising, U.S. 5,370,389 describes a golfing range game which allows a player to practice both long-range and close-range shots while aiming for different target greens located at varying distances from the teeing area. If the player lands a ball on one of the greens, he receives a score on a visual display that is located near the teeing area so the player can easily see his score. Each of the greens is sloped so that a ball that lands upon the greens'  
20 surface will roll into a hole located at the lowest point of the surface. Each ball has a distinctive marking, either a color code or a bar code, so that it can be determined from which tee the ball was hit. After the ball rolls into the hole of a green, a sensor scans the ball and identifies from which tee the ball came. A score is then added to the visual display at the corresponding tee. Each green can have a different point value, depending upon the  
25 difficulty of the golf shot required to land on that green.

Klutz et al., U.S. 5,398,936 describes a golfing apparatus having a golf shot file providing a representation of at least one actual golf shot by the user. The golf shot representation includes at least a time and a distance of a golf ball travel. The apparatus also has a golf

course file for providing a geographic representation of at least a portion of a golf course and simulation means for combining selected portions of the golf shot file and selected portions of the golf course file to simulate at least one golf shot on the selected portions of the golf course based upon at least one actual golf shot by the user. An image display responsive to  
5 the simulation means displays at least one simulated golf shot on the selected portions of the golf course. The method for simulating golf play using actual golf shots by the user includes the steps of providing data representative of at least one actual recorded golf shot by the user, providing data representative of at least a portion of a golf course, and combining selected portions of the golf shot data and selected portions of the golf course data to  
10 simulate at least one golf shot on-the selected portions of the golf course based upon at least one actual golf shot by the user.

Nauck, U.S. 5,413,345 describes a system utilizing an array of high speed video cameras with image processors coupled to data microprocessors, data memory devices, video monitors, control terminals, printout devices, and related hardware and software. The system functions to identify, track, display and record all or selected portions of the path of one or more golf balls from the time each ball is struck, or after it is in flight, until it reaches its final point of rest. The recorded tracking information may be displayed in selected forms such as video or audio replays of the actual golf shot or selected portions thereof, or by  
15 printed data in character or graphic form. The tracking information may be reviewed for detailed study of all or portions of the track of the golf shot as well as the final resting place of the ball with respect to the intended target of the shot. If desired, all or selected portions of the track of the recorded golf shot may be compared to like portions of selected previous golf shots made by the golfer, as well as to selected golf shots made by other golfers and  
20 previously entered into the memory of the system. The golf shot may also be compared to selected parameters which one may desire for comparison to the recorded information relating to the golf shot.  
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Clark, Jr., U.S. 5,445,374 describes a tee area from which contestants may hit golf balls toward flag cups located on a plurality of greens. If a contestant hits a golf ball into a flag cup, a ball sensor detects the presence of the golf ball and a remote indicator announces the presence of such a golf ball in the flag cup. Thereafter, an actuator may be utilized to move a door from a closed position to an open position. When such a door is in the open position, the golf ball is permitted to enter a conduit which extends from the flag cup to a remotely located ball receptacle. The actuator then closes the door and a vacuum pump applies a vacuum to the conduit to move the golf ball from the flag cup to the ball receptacle. Air entering the conduit at the flag cup is filtered to prevent debris or other foreign objects from entering the conduit. The ball receptacle may be made from a transparent material so that the golf ball may be identified as belonging to a particular contestant.

Bonacorsi, U.S. 5,653,642 describes a golfing game and the apparatus for accomplishing the same. The game apparatus includes a driving range having a tee area and a target or series of targets. Using all the skill he possess, the player(s) strike(s) the ball toward the target(s) attempting to reach the target on one stroke. Upon reaching the target in one stroke a verification system signals the validity of the ball entering the target. After the ball entering the target is declared valid, a notification is activated which alerts the other players and personnel on the driving range. Immediately, thereafter the winning player is provided with additional rewards.

Cohen, U.S. 5,884,913 describes a golf tee shot-green placement monitoring system for monitoring golf tee shots to a designated green of a three-par golf course hole for determining the placement of such tee shots upon the green in connection with hole-in-one and closest-to-the-pin contests or challenges. The system comprises a club house base unit, a tee unit, and a green unit. Upon payment of a specified nominal fee, the participating golfer is issued a game card at the club house terminal. Upon reaching the designate three-par hole tee, the golfer inserts the card, or inputs encoded data, into the tee unit which then activates the green unit. Upon driving the tee shot, the green unit, comprising photodetectors and

ultrasonic ranging devices, determines the achievement of a hole-in-one or the placement of the tee shot within specified distances from the cup or hole. If the golfer achieves a hole-in-one or places his tee shot within the specified distances from the hole or cup, prize money is awarded.

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Nation, U.S. 6,012,987 describes an apparatus to facilitate the playing of a recreational game. The apparatus includes an electronic surveillance camera and a motion sensor mounted above and focused on a target area. The image data generated by the camera and the data generated by the motion sensor is transmitted to a central processing unit. The 10 image of the target area transmitted by the surveillance camera is displayed on the screen of a video monitor. Movement of an object on the target area is detected by the motion sensor and displayed on the monitor screen. The central processing unit includes a library of target area overlays to alter the viewed characteristics of the target area on the monitor screen. Each target area may include a marker surrounded by a spaced apart scoring ring or rings so 15 that a ball lying on the target area can, if it lies within a predetermined area, be allocated a score.

Engelhardt et al., U.S. 6,398,670 describes a golf training and game system that is situated in a golf playing facility with tee and target areas. At each target area an overview video camera 20 captures an image of the target area when a golf ball is hit from a tee. A target measuring system performs image improvement methods on the captured image, detects possible balls, and calculates coarse real coordinates for the possible balls. A memory stores real coordinates for previously-identified balls. Coordinates for possible balls and identified balls are compared to determine new balls to be identified. New ball coordinates are used to 25 position, zoom and focus a zoom video camera and capture a fine image. The target measuring system performs image improvement methods and pattern recognition on the fine image to identify the new balls and get fine real coordinates. Information sent to a tee terminal gives feedback to the players.

The prior art teaches the use of golf ball sensing devices used in conjunction with certain games and contests on the golf course, but does not teach the use of a self-contained and sufficient and coin operated video recording system for recording golf drives in a hole in one contest. The present invention fulfills these needs and provides further related advantages as  
5 described in the following summary.

### **SUMMARY OF THE INVENTION**

10 The present invention teaches certain benefits in construction and use which give rise to the objectives described below.

A golf-related video recording apparatus and method comprises one or more tee-off and green areas such as on a golf coarse. A field house is positioned adjacent the tee-off area and houses video recording and playback equipment and a solar powered electrical power  
15 source for powering video equipment. Video cameras are positioned in the tee-off area and the green area and are able to download four channels of video data wirelessly to the video equipment. Motion actuation of the video cameras and coin operated actuation of the system enables capture of drives and putts, and presentation on a video monitor as well as recording on media.

20 A primary objective of the present invention is to provide an apparatus and method of use of such apparatus that provides advantages not taught by the prior art.

Another objective is to provide such an invention capable of recording golf play onto  
25 recording media through coin operated actuation of the invention.

A further objective is to provide such an invention capable of composite video from plural cameras.

A still further objective is to provide such an invention capable of being operating at remote locations by wireless transmission.

Other features and advantages of the present invention will become apparent from the  
5 following more detailed description, taken in conjunction with the accompanying drawings,  
which illustrate, by way of example, the principles of the invention.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

10 The accompanying drawings illustrate the present invention. In such drawings:

Figure 1 is a plan view of the preferred embodiment of a golf fairway and also shows a video monitor with screen showing four views simultaneously;

15 Figure 2 is an elevational view of a field house structure thereof with electrical components of a video system; and

Figure 3 is a block diagram of the video system.

#### **DETAILED DESCRIPTION OF THE INVENTION**

The above described drawing figures illustrate the invention in at least one of its preferred embodiments, which is further defined in detail in the following description. Those having ordinary skill in the art may be able to make alterations and modifications in the present  
25 invention without departing from its spirit and scope. Therefore, it must be understood that the illustrated embodiments have been set forth only for the purposes of example and that they should not be taken as limiting the invention as defined in the following.

The present invention is a golf-related contest and game apparatus, as shown in Figs. 1-3, with video recording system apparatus. The invention includes, on a golf course having at least one hole 10, a tee area 80, and a green area 30, and positioned at the tee area 80, a field-house structure 40. This structure shelters at least a computer 95, labeled "CPU" in Fig. 3, which provides a four channel wireless video data stream receiving, storing, media recording and video playback means, as is well known and in common practice, and is enabled for outputting the four video data streams simultaneously, and further is enabled for producing a media recording thereof, as for instance on a CD, plus a video monitor 80 adapted for receiving and displaying the four video data streams simultaneously, and an electrical power source including a photovoltaic solar display or panel 100 enabled for powering a battery 50, and an inverter 110 for converting direct current from the battery into an alternating current for powering the computer 95 and the video monitor 80. Item 70, shown in Fig. 2 is a large capacity video data storage device used to store user recorded video sessions.

Further, a set of four solar powered video cameras 90 each having a motion sensor actuation switch 140 and a solar power cell 60 for providing electrical operating energy. A first one of the video cameras 90, shown in Fig. 2, is directed at the tee area 80, a second, third and fourth ones of the video cameras 90, each are directed, from a different angle (Fig. 1), at a cup on the green area 30. The video cameras 90 are enabled for wireless video data stream communication with the computer 95 for video data stream input thereto. A coin operated system switch 130, labeled "Coin Device" in Fig. 3, enables a user to move the apparatus from a standby mode to an operational mode, when a golfing party is ready to tee-off.

Importantly, the first video camera 90 is positioned for viewing a line of flight of a golf ball drive from the tee area 80, while the second, third and fourth video cameras 90 are positioned for viewing the golf ball's arrival on the green area 30 and for viewing all strokes on the green area 30.

A charging connector 110 is adapted for enabling charging of the battery 50 by a standard AC power source as for instance, the standard AC utility.

The invention is used in a golf-related game method using the video recording system apparatus. The method comprises the steps of providing the golf course; positioning the field-house structure at the tee area; sheltering within the field-house structure: the computer 95 with its four channel wireless video data stream receiving, storing, media recording and video playback means which is enabled for outputting the four video data streams simultaneously, and further enabled for producing said media recording. Also within the field house, the a video monitor is adapted for receiving and displaying the four video data streams simultaneously; and the electrical power source including the photovoltaic solar display enabled for powering the battery, and an inverter for converting direct current from the battery 50 into an alternating current powering the computer and the video monitor. The method further provides a set of four solar powered video cameras each having a motion sensor actuation switch; directing a first one of the video cameras at the tee area; directing a second, third and fourth ones of the video cameras, each from a different angle, at a cup on the green area; enabling the video cameras for wireless video data stream communication with the computer for video data stream input thereto; actuating a coin operated system switch for providing electrical energy to the system; moving the apparatus from a standby mode to an operational mode, when a golfing party is ready to tee-off; recording tee-off events by motion activation of the first camera when the golfing party provides motion on the tee area; recording green area events by motion activation of the second, third and fourth cameras when the golfing party provides motion on the green area, and recording all motions of all golf balls of the golfing party on a recording medium.

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The above apparatus and method is intended to be used in contests and games such as: trying to obtain a hole-in-one, trying to drive closest to the pin, trying to be the first down, i.e., in the cup, and many alternative game and contest possibilities. More than one fairway of a golf course may be fitted with the apparatus of the present invention and including all of the

holes on the course. As such, the present invention may be used for games and contests as described, or for recording play for instruction purposes.

The enablements described in detail above are considered novel over the prior art of record  
5 and are considered critical to the operation of the instant invention and to the achievement of the above described objectives. The words used in this specification to describe the invention and its various embodiments are to be understood not only in the sense of their commonly defined meanings, but to include by special definition in this specification: structure, material or acts beyond the scope of the commonly defined meanings. Thus if an  
10 element can be understood in the context of this specification as including more than one meaning, then its use must be understood as being generic to all possible meanings supported by the specification and by the word or words describing the element.

The definitions of the words or elements of this described invention and its various  
15 embodiments are, therefore, defined in this specification to include not only the combination of elements which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In this sense it is therefore contemplated that an equivalent substitution of two or more elements may be made for any one of the elements in the  
20 invention and its various embodiments or that a single element may be substituted for two or more elements in a claim.

Changes from the claimed subject matter as viewed by a person with ordinary skill in the art, now known or later devised, are expressly contemplated as being equivalents within the  
25 scope of the invention and its various embodiments. Therefore, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements. The invention and its various embodiments are thus to be understood to include what is specifically illustrated and described above, what is conceptually equivalent,

what can be obviously substituted, and also what essentially incorporates the essential idea of the invention.

While the invention has been described with reference to at least one preferred embodiment,  
5 it is to be clearly understood by those skilled in the art that the invention is not limited thereto. Rather, the scope of the invention is to be interpreted only in conjunction with the appended claims and it is made clear, here, that the inventor(s) believe that the claimed subject matter is the invention.